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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,307	03/12/2004	Jae-Hyun Kim	8054L-50 (LW9007US/HJ)	8101
22150 7590 06/09/2010 F. CHAU & ASSOCIATES, LLC 130 WOODBURY ROAD WOODBURY, NY 11797			EXAMINER CHIEN, LUCY P	
			ART UNIT	PAPER NUMBER
			2871	
			NOTIFICATION DATE	DELIVERY MODE
			06/09/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mail@chauiplaw.com  
uspto1@chauiplaw.com  
garramone@chauiplaw.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/799,307	<b>Applicant(s)</b> KIM ET AL.	
	<b>Examiner</b> LUCY P. CHIEN	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 8, 17, 19-25, 28-31 and 33-46 is/are pending in the application.
- 4a) Of the above claim(s) 38, 39, 44 and 45 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17, 19-25 and 28-31 is/are allowed.
- 6) ☒ Claim(s) 8, 33, 35-37, 40-43 and 46 is/are rejected.
- 7) ☒ Claim(s) 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/31/2010 has been entered.

### ***Election/Restrictions***

Applicant's election without traverse of Species AI, BI, and CII in the reply filed on 5/18/2010 is acknowledged.

### ***Claim Rejections - 35 USC § 102***

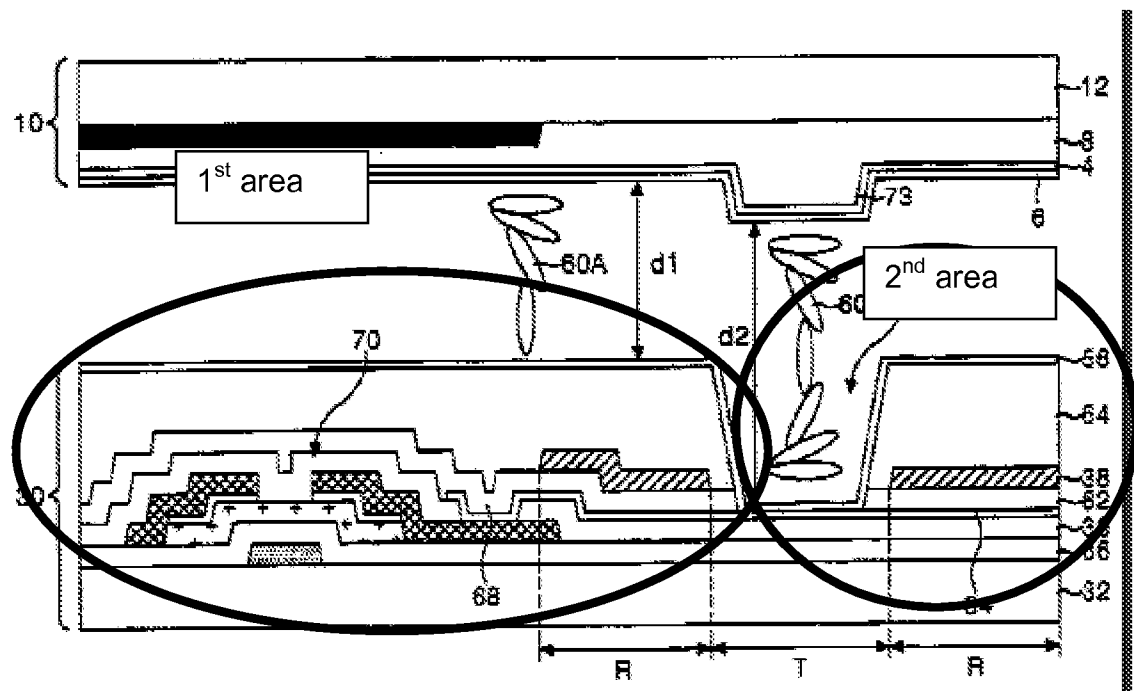
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claim 8,35,40** are rejected under 35 U.S.C. 102(e) as being anticipated by Jin et al (US 6922219).

#### **Regarding Claim 8,**

Jin et al (Fig 10) discloses a first substrate (32 having a first area (broad and can be interpreted to be anywhere, shown below) and a second area (shown below) a switching device (70) formed on the first substrate (32), a first insulating layer (36) formed on the switching device; a pixel electrode (34) formed on the first insulating layer

(36) and connected to the switching device (68), a second insulating layer (62) formed on the pixel electrode (34) and in the first area, a reflecting plate (38) formed on the second insulating (62) a second substrate (12) facing the first substrate (32); and a liquid crystal layer (60a) interposed between the first and second substrates; the reflecting plate partially overlaps (the reflector overlaps all the transparent regions to make it a reflective region, thus, overlaps with the second area. Second area also construed as the part where the reflector is not overlapping the D2 area) with the second area (shown circled below). The liquid crystal molecules rubbed along a predetermined direction (alignment film 56).



*Regarding Claim 35,*

Jin (Fig. 10) discloses a third insulating layer (64) formed on the second insulating layer (62)

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Regarding Claim 40,

Jin (Fig. 10) discloses wherein the second substrate includes a color pixel (8) having a first thickness in the first area and a second thickness in the second area, and the first thickness is different from the second thickness (column 6, lines 30-37)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 8,33,36,37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 20020109141) in view of Ha et al (US 6704081)

Regarding Claim 8,37,

Kim et al (Fig 3b) discloses a first substrate (21) having a first area (broad and can be interpreted to be anywhere, shown below) and a second area (shown below) a switching device (22a) formed on the first substrate (21), a first insulating layer (26) formed on the switching device; a pixel electrode (29) formed on the first insulating layer (26) and connected to the switching device (25b), a second insulating layer (28) formed on the pixel electrode (29) and in the first area, a reflecting plate (27) formed on the second insulating (28) a second substrate ([0006]) facing the first substrate (21); and a liquid crystal layer ([0006]) interposed between the first and second substrates; the

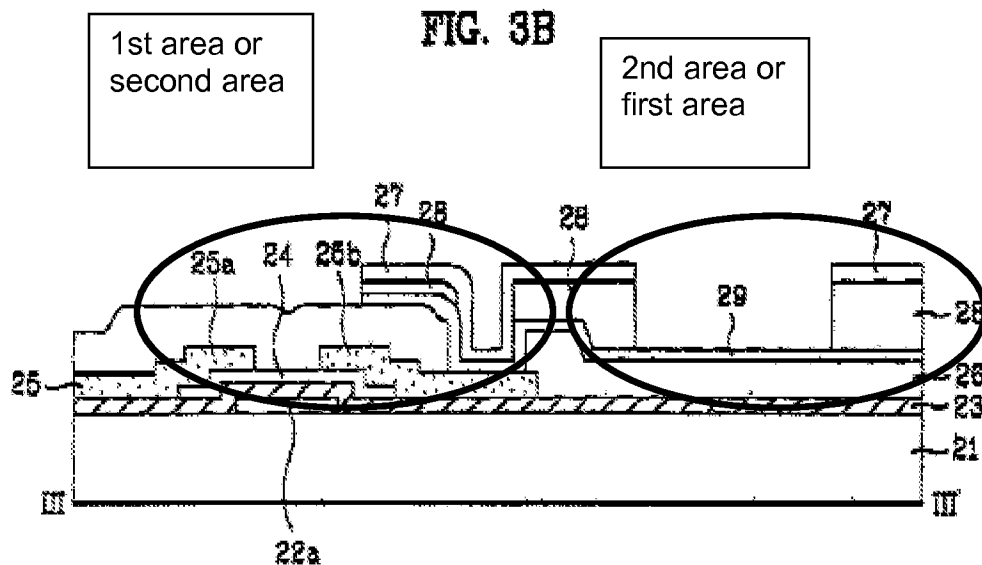
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reflecting plate partially overlaps (the reflector overlaps all the transparent regions to make it a reflective region, thus, overlaps with the second area) with the second area (shown circled below,).

Kim et al does not disclose the liquid crystal molecules rubbed along a predetermined direction.

Ha (Fig. 12) discloses the liquid crystal molecules rubbed along a predetermined direction (column 8, lines 63-67) Ha et al discloses in Figure 12 the pixel electrode (230) electrically connected to a reflecting plate (226) comprises an L-shaped when the rubbing direction is  $-45$  degrees. (Column 6 Row 66 and Column 7, Row 1-7) teaches the location of the reflector on the sides of the transmission region is determined by the alignment direction by the rubbing direction. Therefore, it is obvious to have the rubbing direction in the desired 10,11,1,2, and 12 o clock to make the L-shape of the area where reflecting plate is connected to the pixel electrode.

It would have been obvious to one of ordinary skill in the art to modify Kim et al to include Ha's rubbing direction to determine the location of the reflector on the side of the transmission area. (Column 6 Row 66 and Column 7, Row 1-7)



Regarding Claim 33,

In addition to Kim et al and Ha as disclosed above, Kim et al (Fig. 3b) discloses wherein the pixel electrode (29) is electrically connected to the switching device (25b) through a contact hole that is formed through the first insulating layer (26).

Regarding Claim 36,

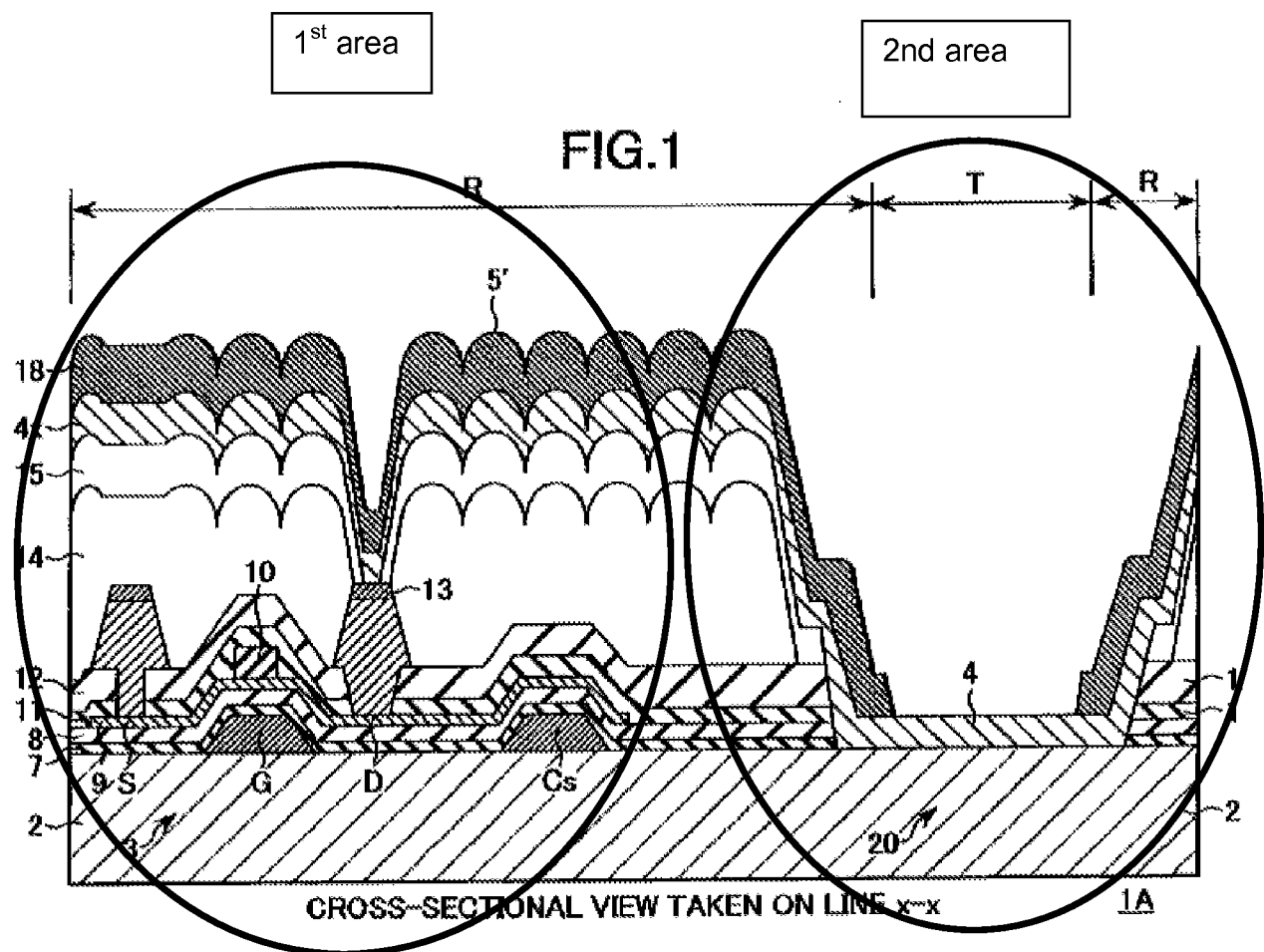
In addition to Kim et al and Ha as disclosed above, Kim et al (Fig. 3b) discloses wherein a portion of the reflecting plate (27) makes contact with the pixel electrode (29) in the second area (shown above, the reflecting plate contacting the pixel electrode to contact the drain (25b)).

**Claim 41-43,46** are rejected under 35 U.S.C. 102(b) as being anticipated by Shigeno et al (US 20020033918).

Regarding Claim 41,

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Shigeno et al discloses (Fig. 1) a substrate (2) having a first area (very broad and be construed as anywhere, circled below) and a second area (very broad, and can be construed as being anywhere, see figure below) a switching device (G,D,S) formed on the substrate (2); a first insulating layer (12) formed on the switching device; a second insulating layer (14) formed on the first insulating layer (12) and in the first area; a pixel electrode (4x) formed on the first insulating layer (12) and connected to the switching device (D,13); a third insulating layer (15) formed on the second insulating layer (14); and a reflecting plate (18) formed on the third insulating layer (15), wherein the reflecting plate is formed in the first area (shown below).





Regarding Claim 42,

Shigeno et al discloses (Fig. 1) wherein a portion of the reflecting plate is formed in the second area (T).

Regarding Claim 43,

Shigeno et al discloses (Fig. 1) wherein a portion of the third insulating layer is formed in the second area (shown above).

Regarding Claim 46,

Shigeno et al discloses (Fig. 1) wherein the pixel electrode (4x) is electrically connected to the switching device (13) through a contact hole that is formed through the second insulating layer (14).

***Allowable Subject Matter***

**Claim 34** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding Claim 34,

The prior art does not disclose including a third insulating layer formed between the pixel electrode and the reflecting plate.

***Allowable Subject Matter***

**Claims 17,19,20,28,29 are allowed.**

Regarding Claim 17,

Kim et al al (US 6720580) discloses (Fig. 3b) a switching device (22a) formed in a pixel area that is defined by a gate line (22a) and a source line disposed on the first substrate, the gate line extended in a first direction and arranged in a second direction substantially perpendicular to the first direction, the Source line extended in the second direction and arranged in the first direction (shown in Fig. 3a); a pixel electrode (29) connected to a drain electrode (25b) of the switching device; and a reflecting plate (27) disposed on the pixel electrode (29) so as to define a reflecting area from which the natural light is reflected and a transmitting area through which the artificial light is transmitted, wherein the pixel electrode (29) has a first height at the reflecting area (shown below) and a second height at the transmitting area, wherein the first height is greater than the second height with respect to the first substrate (21), and wherein the reflecting plate (27) has a first edge extended to the transmitting area an insulating layer (26) formed on the switching device and the first substrate with a first contact hole through which the drain electrode (25b) is partially exposed; and an organic insulating layer (28)(Column 6, row 64) formed on the reflecting area with a second contact hole corresponding to the first hole so as to expose the drain electrode (25b).

Kim et al does not disclose the reflecting plate has a first edge extending into the second area (transmissive area). And a protecting layer formed on the pixel electrode connected to the drain electrode through the second and first contact holes wherein the reflecting plate is formed on the protecting layer.

Nakashima et al (US 6774965) I (Fig. 9) discloses the reflecting plate (10,11) having a first edge extended to the two sides of transmitting area to avoid alignment defect

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of liquid crystals due to a difference in level on the organic layer which decreases display quality (Column 8, rows 13-25).

Jang discloses (US 5767927) (Fig. 2d) a protecting layer (19) formed on the pixel electrode (18) connected to the drain electrode through the second and first contact holes to orientate the liquid crystal molecules.

The prior art does not disclose nor would it have been obvious to one of ordinary skill in the art to disclose an insulating layer and organic insulating layer formed on the first area with a second contact hole corresponding to the first contact hole so as to expose the drain electrode; and a protecting layer formed on the pixel electrode connected to the drain electrode through the second and first contact holes wherein the reflecting plate is formed on the protecting layer.

Claim 19,20,28,29 depend on Claim 17, therefore are allowable.

**Claim 21-25,30,31 are allowed.**

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose nor does not reasonably a pixel electrode partially formed on the insulating layer, and connected to the drain electrode through the contact hole; an organic insulating layer formed on the insulating layer and the pixel electrode in the reflecting area to expose the pixel electrode corresponding to the transmitting area; an inter-insulating layer formed on the organic layer corresponding to the reflecting area; and a reflecting plate disposed on the inter-insulating layer so as to define the

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reflecting area and the transmitting area, the reflecting plate having a first edge extended to the transmitting area to connect the reflecting plate to the pixel electrode.

Claims 22-25,30,31 are dependent on Claim 21 and are therefore allowable.

It is the examiners opinion that these limitations show novelty over the prior art and are therefore allowable.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUCY P. CHIEN whose telephone number is (571)272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Lucy P Chien  
Examiner  
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